

Serial No. 09/745,345
Reply to Office Action of March 11, 2004
Reply dated JUNE 10, 2004

Docket No. P-0172

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An ATM (Asynchronous Transfer Mode) cell transmitting device of an ATM switching system comprising:

a time slot input unit for switching a plurality of time slots;

a packet processing unit for forming a CPS (Common Part Sublayer) packet by using data corresponding to the switched time slot data and slots;

a CAM (Contents Addressable Memory) for receiving header information of the CPS packet and outputting an ATM buffer number;

an ATM cell transmitting unit for storing the data of the CPS packet data outputted from the packet processing unit according to the ATM buffer number outputted from the CAM, to form an ATM cell; and

a controlling unit for performing a general controlling operation,

wherein the CAM allocates a same ATM buffer number to include different time slots and CIDs in the same ATM buffer number.

2. (Original) The device according to claim 1, further comprising a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit.

3. (Original) The device according to claim 2, wherein the ATM cell transmitting unit receives a CPS packet data and an ATM header for a predetermined time as set in the timer and outputs an ATM cell.

-913 4. (Original) The device according to claim 3, wherein the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer.

5. (Original) The device according to claim 1, wherein the header information of the CPS packet refers to a time slot number and a channel identifier (CID).

6. (Currently Amended) The device according to claim 1, wherein the time slot input unit ~~comprising~~ comprises:

a time switch for switching ~~[[a]]~~ the plurality of time slots;

an input buffer unit for storing the data corresponding to the plurality of time slot ~~data~~ slots outputted from the time switch; and

a multiplexer for selectively outputting the ~~time slot~~ data stored in the input buffer unit.

7. (Currently Amended) The device according to claim 1, wherein the packet processing unit ~~comprising~~ comprises:

A13 a packet header storing unit for receiving a CPS packet header by time is slot from the controlling unit and storing the same; and

a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer, to form a CPS packet.

8. (Canceled).

9. (Currently Amended) The device according to claim 1, wherein the ATM cell transmitting unit ~~comprising~~ comprises:

an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers according to the ATM buffer number of the CAM;

an ATM header generating unit for storing an ATM header; and

a transmitting buffer for combining the outputs of the ATM buffer unit and of the ATM header generating unit, to form an ATM cell.

10. (Currently Amended) An ATM (Asynchronous Transfer Mode) cell transmitting device comprising:

- a time slot input unit for switching a plurality of time slots;
- a packet processing unit for receiving data corresponding to the switched time slot ~~data~~ slots and forming a CPS (Common Part Sublayer) packet;
- a CAM (Contents Addressable Memory) for outputting ATM buffer numbers for the time slot ~~slots~~ and the a CID (Channel Identifier) inputted from the packet processing unit;
- an ATM transmitting unit for storing the data of the CPS packet outputted from the packet processing unit according to the ATM buffer number outputted from the CAM, to form an ATM cell;
- a timer for setting an ATM cell transmitting unit; and
- a controlling unit for performing a general controlling operation,

wherein the CAM includes a look-up table having different time slot numbers and CIDs allocated to a same ATM buffer number such that a plurality of time slots are multiplexed in the same ATM buffer number.

11. (Currently Amended) The device according to claim 10, wherein the time slot input unit ~~comprising~~ comprises:

a time switch for switching ~~[[a]]~~ the plurality of time slots;

an input buffer unit having a plurality of small capacity of buffers, for storing ~~[[a]]~~ the data corresponding to the plurality of time ~~slot data~~ slots outputted from the time switch; and

a multiplexer for selectively outputting ~~a time slot~~ data stored in the input buffer unit.

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12. (Currently Amended) The device according to claim ~~[[1]]~~ 10, wherein the packet processing unit ~~comprising~~ comprises:

a packet header storing unit for storing a CPS packet header provided from the controlling unit; and

a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer to form a CPS packet.

13. (Canceled).

14. (Original) The device according to claim 10, wherein the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM

cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer.

15. (Currently Amended) The device according to claim 10, wherein the ATM cell transmitting unit ~~comprising~~ comprises:

an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers indicated by the ATM buffer number of the CAM;

an ATM header generating unit for storing the ATM header provided from the controlling unit; and

a transmitting buffer for combining the outputs of the ATM buffer unit and of the ATM header generating unit, to form an ATM cell.

16. (Currently Amended) An ATM (Asynchronous Transfer Mode) cell transmitting device of a switching system comprising:

an ATM cell receiving unit for extracting a CPS (Common Part Sublayer) packet from a received ATM cell and storing it according to an ATM buffer number;

a packet processing unit for converting header information of the extracted CPS packet and the ATM buffer number outputted from the ATM cell receiving unit into a

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time slot number and storing a payload of the CPS packet according to the to ~~converted~~ time slot number; and

a time slot output unit for demultiplexing the payload of the CPS packet outputted from the packet processing unit to a plurality of time slots and outputting the same,

wherein a single ATM buffer number includes multiple time slot numbers and CIDs (Channel Identifiers).

913 17. (Currently Amended) The device according to claim 16, wherein the header information of the CPS packet ~~is a channel identifier (CID)~~ includes the CID.

18. (Original) The device according to claim 16, wherein the ATM buffer number is determined by the VPI/VCI included in the header of the ATM cell.

19. (Currently Amended) The device according to claim 16, wherein the ATM cell receiving unit ~~comprising~~ comprises:

a receiving buffer for storing the ATM cell received through the ATM network;

a cell segmenting unit for reading the ATM cell from the receiving buffer,
extracting a CPS packet and outputting VPI/VCI information of the ATM cell header;
a first CAM for outputting an ATM buffer number corresponding to the
output VPI/VCI of the cell segmenting unit; and
an ATM buffer unit for storing the CPS packet outputted from the cell
segmenting unit according to the ATM buffer number outputted from the first CAM.

a13 20. (Currently Amended) The device according to claim 19, wherein the ATM
buffer unit ~~having~~ has a small capacity of N number of ATM buffers, for outputting an ATM
buffer number and the ~~channel identifier~~ CID of the CPS packet header to the packet
processing unit as the CPS packet is wholly completed.

21. (Currently Amended) The device according to claim ~~[[16]]~~ 19, wherein the
packet processing unit ~~comprising~~ comprises:
a second CAM for outputting a time slot number corresponding to the ATM
buffer number inputted from the ATM receiving unit; and
a CPS packet buffer unit for storing the CPS packet payload outputted from
the ATM receiving unit according to the time slot number outputted from the second CAM.

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22. (Currently Amended) The device according to claim 16, wherein the time slot output unit ~~comprising~~ comprises:

a demultiplexer for receiving the CPS packet payload from the CPS packet buffer unit and demultiplexing it to a plurality of time slots;

an output buffer unit having N number of small capacity of buffers, for storing data corresponding to the time slot ~~data slots~~ demultiplexed by the demultiplexer; and

a time switch for switching the plurality of time slots stored in the output buffer unit.
